

WHAT IS CLAIMED IS:

1. An image forming apparatus comprising:

an electron generating device which generates electrons when illuminated, the electron generating device being disposed face to face with a surface of an image carrying member across a specific gap between the electron generating device and the surface of the image carrying member;

an LED array including as large a number of LED elements as necessary for achieving an intended resolution of image information from which an image is to be formed, the LED array being disposed face to face with the surface of the image carrying member with the electron generating device placed therebetween; and

a driving circuit for activating the LED array according to the image information.

2. The image forming apparatus according to claim 1, wherein the LED elements are arranged in a linear form along a main scanning direction at intervals corresponding to the resolution of the image information.

3. The image forming apparatus according to claim 1, wherein the gap between the surface of the image carrying member and the electron generating device is set to a range

of 50  $\mu\text{m}$  to 500  $\mu\text{m}$ .

4. The image forming apparatus according to claim 1, wherein the gap between the surface of the image carrying member and the electron generating device is set to a range of 100  $\mu\text{m}$  to 200  $\mu\text{m}$ .

5. The image forming apparatus according to claim 1, wherein the electron generating device includes a photochromic material and the LED array emits light having a wavelength of 350 nm.

6. The image forming apparatus according to claim 1, wherein the electron generating device includes a photoelectric surface and the LED array emits light having a wavelength of 150 nm to 350 nm.

7. The image forming apparatus according to claim 1, wherein the electron generating device includes a photoelectric surface made of a thin film formed of one of a conductor material and a semiconductor material having a light transmittance of 50% to 70%.

8. The image forming apparatus according to claim 1, wherein the driving circuit supplies a driving signal

corresponding to blank areas of the image formed from the image information.

9. The image forming apparatus according to claim 1, wherein the driving circuit supplies a driving signal corresponding to dark areas of the image formed from the image information.

10. The image forming apparatus according to claim 1 further comprising a discharging unit for projecting discharging light to a surface area of the image carrying member within a period from a point in time when a toner image is transferred to a surface of a recording medium to a point in time when said surface area of the image carrying member faces the electron generating device to eliminate a residual surface potential from said surface area.